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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,674	09/05/2000	Masahide Shima	08917-055001	7335

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EXAMINER
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NGUYEN, CAM N

ART UNIT	PAPER NUMBER
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1754

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DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**Application No.  
**09/651,674**Applicant(s)  
**Shima et al.**Examiner  
**Cam Nguyen**Art Unit  
**1754****-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on May 9, 2003
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above, claim(s) 8-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5 & 6                      6) ☐ Other:

Art Unit: 1754

### **DETAILED ACTION**

1. Applicant's election without traverse of Group I, claims 1-7, in Paper No. 9 is acknowledged.
2. Claims 8-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 9.

#### ***Claim Objections***

3. Claim 5 is objected to because of the following informalities:  
  
In line 1, "aluminium" should be --aluminum--.  
  
Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112 (Second Paragraph)***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1754

Regarding claim 1, line 3-4, the phrase "assuming an acidic color in methyl red, an indicator of pKa +4.8" is unclear as what applicants intend. It appears that this might be a process limitation.

***Claim Rejections - 35 USC § 102(b)***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 3, & 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent (JP-A-55-145677), "hereinafter Japanese '677".

Japanese '677 discloses a non-acidic support having a total content of alumina, silica, and titania of not less than 99 percent by weight (see page 1, ln 15-17), and not allowing Methyl Red with a pKa of +4.8 to show a color change into its acid color (see page 1, ln 20-21). The non-acidic support is having a surface area of from 0.5 to 10 m<sup>2</sup>/g or from 1 to 5 m<sup>2</sup>/g (see page 1, ln 22-24). Japanese '677 also discloses a process of preparing the non-acidic support as described above, by calcining the metal compounds at a calcination temperature of from 1000°C to 2000°C (see page 2, ln 21- page 3, ln 9).

Art Unit: 1754

Japanese '677 discloses the claimed ceramic article and its method of production, thus anticipates the claims.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2 & 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent (JP-A-55-145677), "hereinafter Japanese '677", as applied to claims 1, 3, & 6 above, and further in view of Oda et al., "hereinafter Oda", (US Pat. 4,316,965).

Japanese '677 discloses the claimed ceramic article and its method of production, except for the aluminum, silicon, and titanium contents.

However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized the aluminum, silicon, and titanium at the amounts as suggested by Oda (see Oda at col. 8, claim 1) in order to achieve an improved support material having the advantage, such as a small coefficient of thermal expansion, a high melting point, and a high mechanical strength (see Oda at col. 1, ln 6-8) in Japanese '677 because Oda teaches 6.5 to 68% by weight of alumina ( $\text{Al}_2\text{O}_3$ ), 19 to 80% by weight of titanium oxide ( $\text{TiO}_2$ ), 1 to 20% by

Art Unit: 1754

weight of silica ( $\text{SiO}_2$ ) is sufficient to result in a useful ceramic material or catalyst support (see Oda at col. 8, claim 1).

With respect to the alumina content, while Oda teaches a maximum amount of 68% by weight, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have optimized such alumina amounts to the desired amounts, such as the claimed amounts from 70.0 to 99.5% by weight, in order to obtain a more effective ceramic material or catalyst support material since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art, see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

10. Claims 5 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent (JP-A-55-145677), "hereinafter Japanese '677", as applied to claims 1, 3, & 6 above, and further in view of Nagase et al., "hereinafter Nagase", (US Pat. 5,395,812).

Japanese '677 discloses the claimed ceramic article and its method of production, except for the following differences.

Japanese '677 does not disclose  $\alpha$ -alumina and its properties. It would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized a known  $\alpha$ -alumina carrier, having a secondary particle diameter in the range of from 20 to 200  $\mu\text{m}$  formed of primary  $\alpha$ -alumina particles 0.1 to 10  $\mu\text{m}$  in diameter and a specific surface area in the range of from 0.1 to 10  $\text{m}^2/\text{g}$  as taught by Nagase (see Nagase at col. 4, ln 1-5) to

Art Unit: 1754

result in an improved support material in Japanese '677 because it is a known and useful catalyst support<sub>n</sub> material.

### *Citations*

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Erickson et al. (US Pat. 5,645,619), Plecha et al. (US Pat. 6,117,814), Szymanski et al. (US Pat. 5,733,840), Gerdes et al. (US Pat. 5,512,530), Gerdes et al. (US Pat. 5,733,842), Itoh (US Pat. 5,316,996), Denton et al. (US Pat. 6,329,315 B1), Lachman et al. (US Pat. 4,631,267), Brezny (US Pat. 5,322,821), Lachman et al. (US Pat. 4,631,269), Clough et al. (US Pat. 5,633,081), Peterson (US Pat. 5,669,941), Stranford et al. (US Pat. 5,004,709), & Wissner et al. (US Pat. 4,764,498) are cited for related art.

### *Conclusion*

12. Claims 1-22 are pending. Claims 1-7 are rejected. Claims 8-22 are withdrawn due to nonelected (or distinct) invention. No claims are allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (703) 305-3923. The examiner can normally be reached on M-F from 8:30 am. to 6:00 pm, with alternative Monday off.

Art Unit: 1754

The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 (before finals) and (703) 872-9311 (after-final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Nguyen/cnn *CNN*

May 18, 2003

A handwritten signature in black ink, appearing to read 'Cam Nguyen', with a stylized, flowing script.

Cam Nguyen

Patent Examiner